

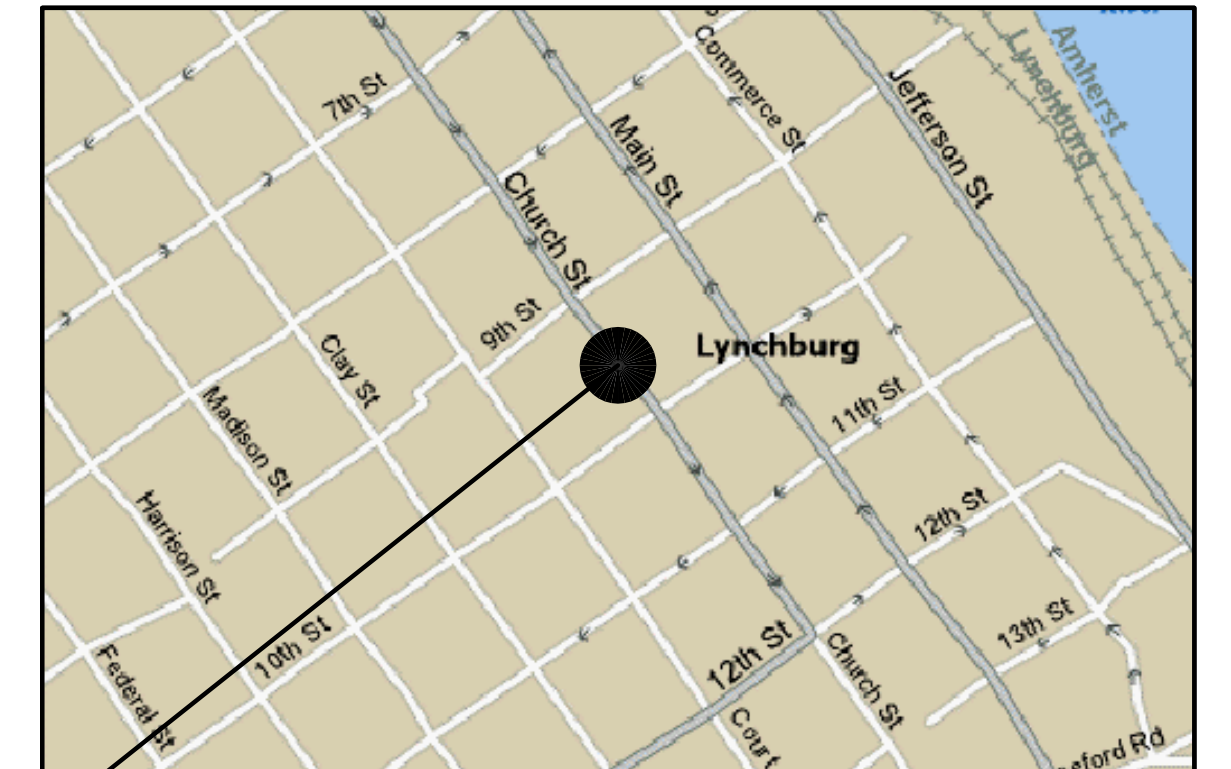
CITY OF LYNCHBURG

REPLACEMENT OF CITY HALL

AIR COMPRESSOR AND COOLING TOWER

LYNCHBURG, VIRGINIA

FOR CONSTRUCTION
SEPTEMBER 19, 2006



ADDITIVE BID ITEMS:

1. ANY OR ALL ADDITIVE BIDS ITEMS MAY BE ACCEPTED AT THE OPTION OF THE CITY OF LYNCHBURG.
2. ADDITIVE BID ITEMS GENERALLY CONSIST OF THE WORK SUMMARIZED BELOW:

ADDITIVE BID ITEM #1
LINTEL INSTALLATION FOR AIR COMPRESSOR INSTALLATION.

ADDITIVE BID ITEM #2
REPLACEMENT-IN-KIND OF EXISTING AIR DRYER.

ADDITIVE BID ITEM #3
STAINLESS STEEL COLD WATER BASIN FOR NEW COOLING TOWER.

REQUIRED SUBMITTALS:

MECHANICAL

COOLING TOWER
AIR COMPRESSOR

ELECTRICAL

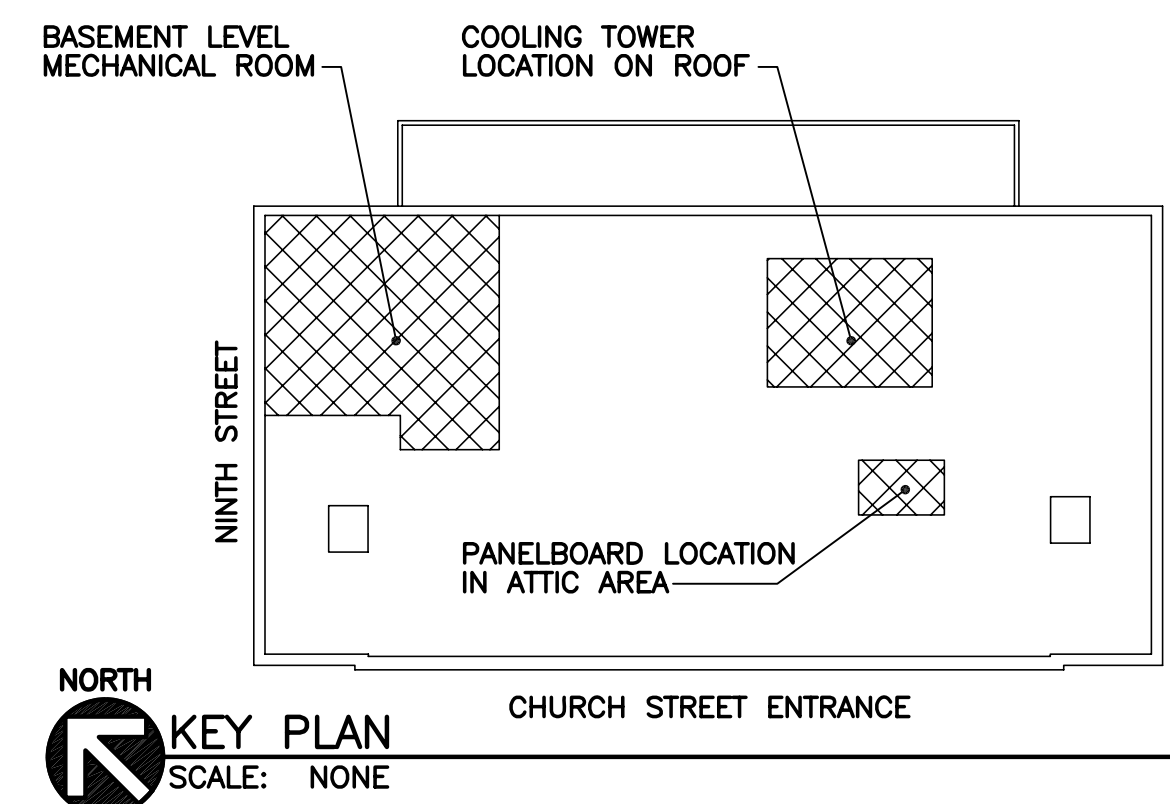
DISCONNECT SWITCHES
RECEPTACLES

STRUCTURAL

STRUCTURAL STEEL SHOP DRAWINGS
PAINT

DRAWING LIST:

DRAWING NO	TITLE
T1	TITLE SHEET
D1	DEMOLITION PLANS AND NOTES
ME1	LEGEND, NOTES AND SPECIFICATIONS
ME2	MECHANICAL / ELECTRICAL PLANS AND SCHEMATICS
S1	FRAMING PLAN, SECTIONS AND DETAILS



APPLICABLE CODES:

VIRGINIA UNIFORM STATEWIDE BUILDING CODE – VUSBC (NOV 16, 2005)
INTERNATIONAL BUILDING CODE – IBC (2003)
INTERNATIONAL MECHANICAL CODE – IMC (2003)
INTERNATIONAL PLUMBING CODE – IPC (2003)
NATIONAL ELECTRICAL CODE – NFPA-70 (2002)

GENERAL NOTES:

1. CONTRACTOR SHALL KEEP PUBLIC AREAS FREE OF TRASH AND CONSTRUCTION DEBRIS AND CLEAN ENTIRE WORK AREA ON A DAILY BASIS.
2. TEMPORARY POWER AND WATER SERVICE ARE AVAILABLE ON SITE. CONTRACTOR SHALL COORDINATE REQUIREMENTS WITH THE CITY'S PROJECT MANAGER.
3. CONTRACTOR IS PERMITTED TO USE PUBLIC RESTROOM FACILITIES LOCATED IN CITY HALL FOR THE DURATION OF THE PROJECT.
4. CONTRACTOR IS PERMITTED TO WORK BETWEEN 7:00 AM AND 6:00 PM, MONDAY THROUGH FRIDAY, EXCEPT FOR HOLIDAYS OBSERVED BY THE CITY OF LYNCHBURG. COORDINATE ACCESS WITH CITY'S PROJECT MANAGER.
5. CONTRACTOR IS PERMITTED TO USE THE MECHANICAL ROOM FOR LAYDOWN AND STORAGE OF MATERIALS AND EQUIPMENT. CONTRACTOR SHALL COORDINATE ACCESS WITH CITY'S PROJECT MANAGER.
6. THE CONTRACTOR SHALL OBTAIN ALL BUILDING AND TRADE PERMITS FOR CONSTRUCTION. HOWEVER, THE CITY OF LYNCHBURG SHALL WAIVE ALL FEES REQUIRED FOR PERMITS.
7. CONTRACTOR SHALL PROTECT EXISTING EPDM ROOF SYSTEM AS REQUIRED DURING CONSTRUCTION AND SHALL NOT VOID ANY EXISTING ROOF WARRANTY BY WORK PERFORMED ON THIS PROJECT.
8. THE HVAC CONTROL AIR MUST REMAIN AVAILABLE FOR HVAC SYSTEM OPERATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING UNINTERRUPTED HVAC OPERATION DURING OCCUPIED PERIODS BY EITHER PROVIDING A TEMPORARY AIR COMPRESSOR OR REPLACING THE AIR COMPRESSOR DURING AN UNOCCUPIED PERIOD.

ASBESTOS DISCLOSURE STATEMENT:

AN ASBESTOS INSPECTION WAS NOT PERFORMED. THE CONTRACTOR SHALL NOTIFY THE CITY'S PROJECT MANAGER OF ANY SUSPECTED MATERIALS FOR REMOVAL BY THE CITY OF LYNCHBURG.

LEAD PAINT DISCLOSURE STATEMENT:

A LEAD-BASED PAINT INSPECTION WAS NOT PERFORMED. THE CONTRACTOR SHALL NOTIFY THE CITY'S PROJECT MANAGER OF ANY SUSPECTED MATERIALS FOR REMOVAL BY THE CITY OF LYNCHBURG.

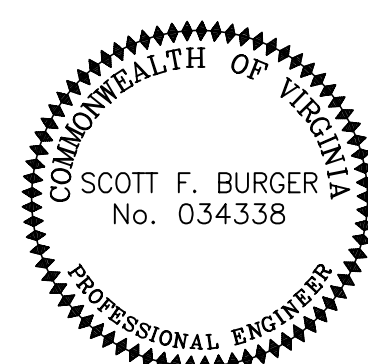
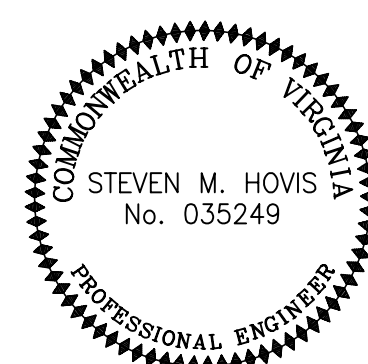
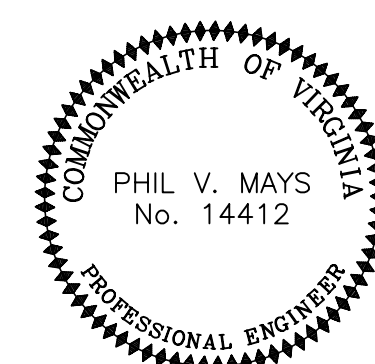
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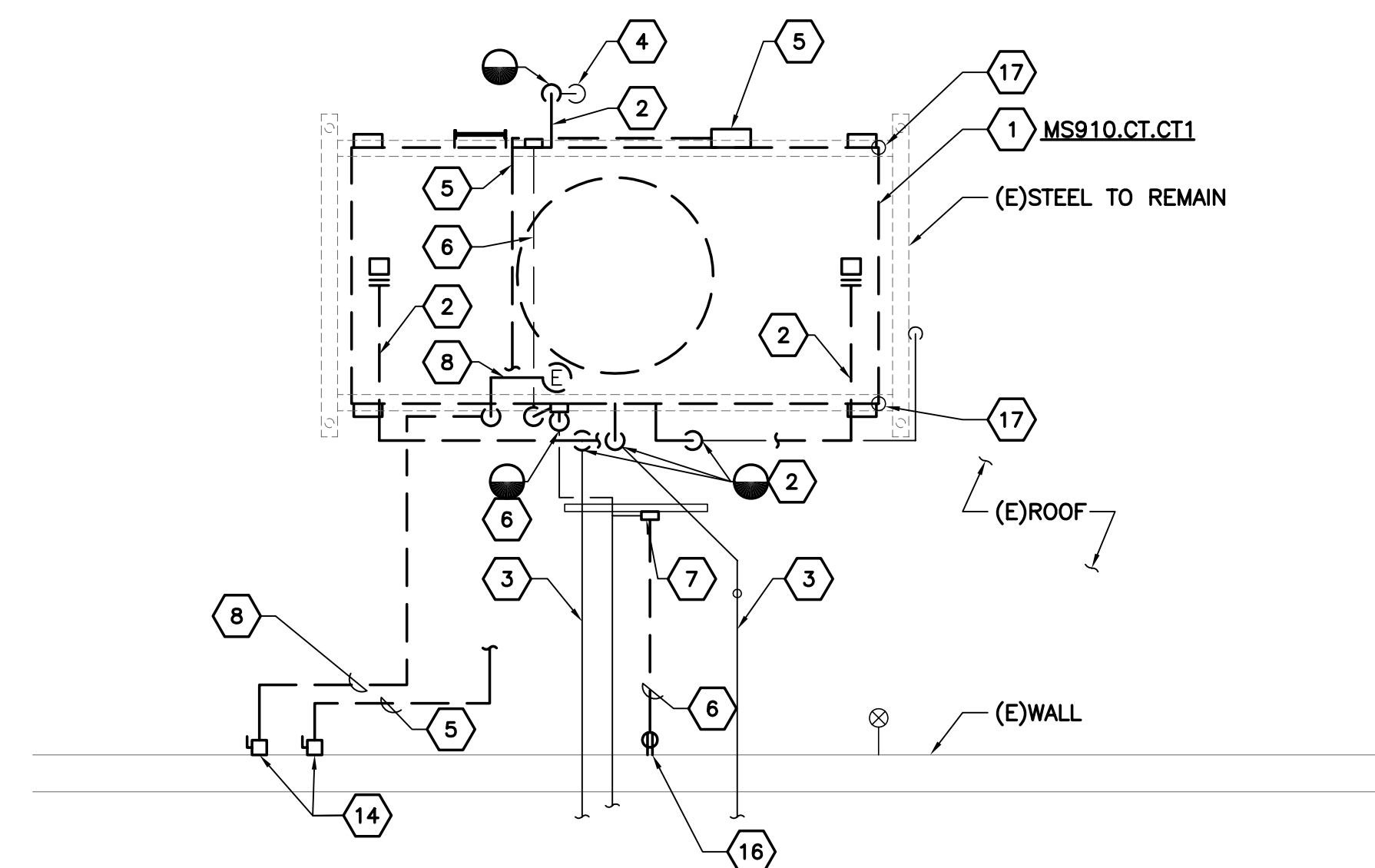
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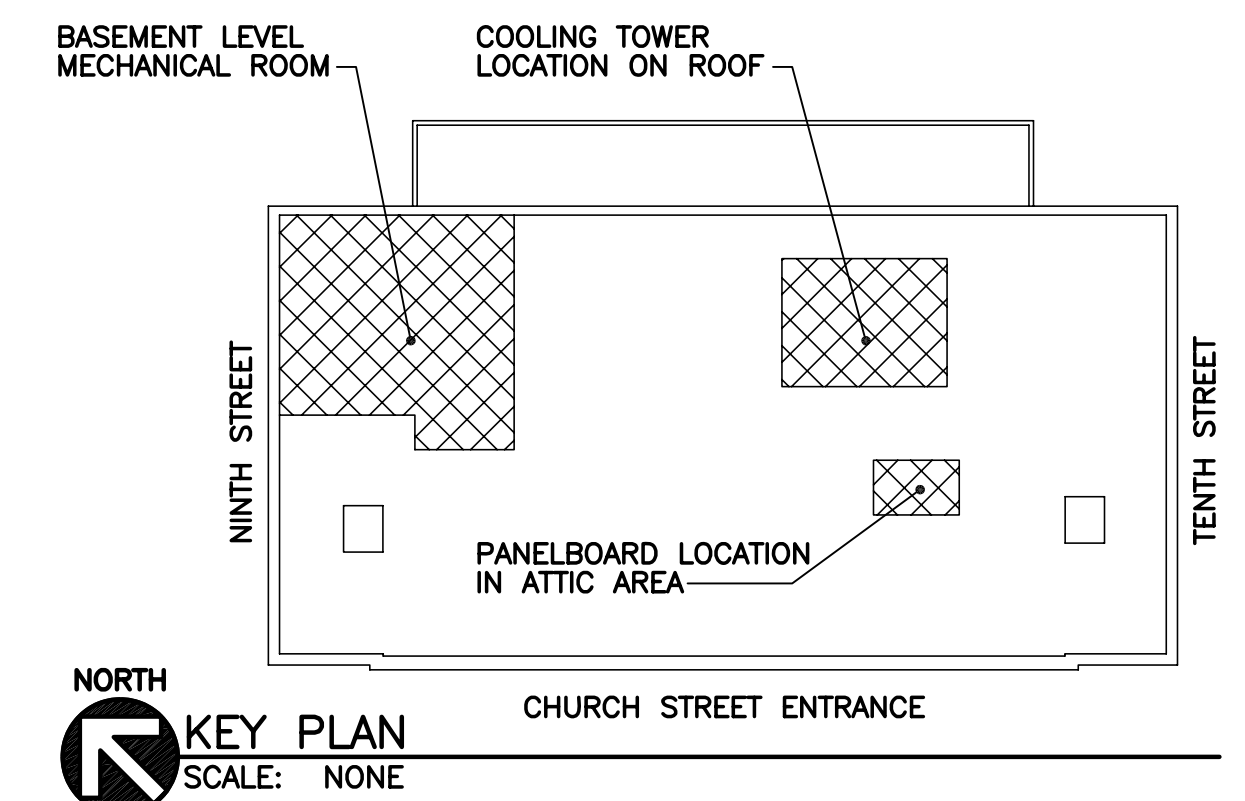
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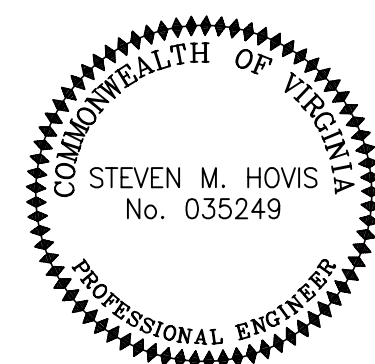
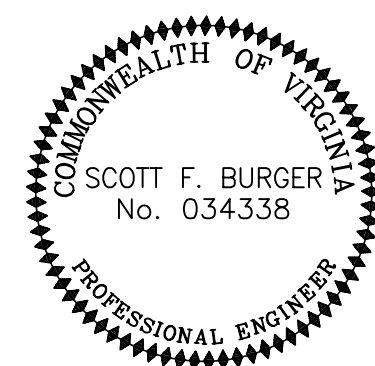


NORTH
 **PARTIAL ROOF PLAN – DEMOLITION**
SCALE: 1/4"=1'-0"

- ### DEMOLITION NOTES:
- 1 REMOVE COOLING TOWER IN ITS ENTIRETY. STEEL SUPPORT STRUCTURE TO REMAIN.
 - 2 REMOVE 6" CONDENSER WATER SUPPLY AND RETURN PIPING, 3" DRAIN PIPING, 3" OVERFLOW PIPING, AND 1-1/4" MAKEUP WATER PIPING FROM TOWER CONNECTION BACK TO FIRST WELD OR FLANGE IN VERTICAL PIPING.
 - 3 REMOVE INSULATION AND HEAT TRACING ON REMAINING 6" CONDENSER WATER SUPPLY AND RETURN PIPING FROM POINT OF DEMO BACK TO WALL.
 - 4 REMOVE INSULATION AND HEAT TRACING ON REMAINING 1-1/4" MAKEUP WATER PIPING FROM POINT OF DEMOLITION BACK TO ROOF.
 - 5 REMOVE CONDUIT AND POWER WIRING FROM BASIN HEATER CONTROL BOX BACK TO DISCONNECT.
 - 6 REMOVE HEAT TRACE THERMOSTATS AND CONDUIT AND POWER WIRING BACK TO RECEPTACLE.
 - 7 REMOVE HEAT TRACE THERMOSTAT.
 - 8 REMOVE RACEWAY AND CONDUCTORS BETWEEN DISCONNECT AND COOLING TOWER FAN MOTOR.
 - 9 REMOVE AIR DRYER.
 - 10 REMOVE AIR COMPRESSOR IN ITS ENTIRETY. CONCRETE EQUIPMENT PAD TO REMAIN. REFER TO GENERAL NOTE 8 ON TITLE SHEET.
 - 11 DISCONNECT 1" COMPRESSED AIR PIPING FROM COMPRESSOR. REMOVE 3/8" DRAIN PIPING AND AUTO DRAIN VALVE.
 - 12 REMOVE 3/8" COMPRESSED AIR INLET AND OUTLET PIPING FROM AIR DRYER TO POINT INDICATED AND SALVAGE BALL VALVES FOR REINSTALLATION. REMOVE 1/4" DRYER DRAIN PIPING AND SALVAGE BALL VALVE FOR REINSTALLATION. REMOVE 3/4" CONDUIT AND WIRING BELOW TO RECEPTACLE AND SALVAGE FOR REINSTALLATION. REMOVE CONTROL DEVICES ABOVE AND ASSOCIATED CONDUIT AND WIRING AND SALVAGE FOR REINSTALLATION.
 - 13 REMOVE BRICK AND BLOCK TO CREATE OPENING IN WALL. REFER TO DRAWING S1.
 - 14 REMOVE 30A/3P UNFUSED DISCONNECT. RETAIN LINE-SIDE RACEWAY AND CONDUCTORS FOR RE-USE.
 - 15 NOT USED
 - 16 REMOVE RECEPTACLE AND BACK-BOX. RETAIN LINE-SIDE RACEWAY AND CONDUCTORS FOR RE-USE.
 - 17 REMOVE ANTENNA AND CONNECTING CABLE AND TURN OVER TO OWNER.
 - 18 DISCONNECT LOAD-SIDE CONDUCTORS TO COOLING TOWER FROM STARTER IN POSITION 3B. RE-LABEL STARTER AS SPARE. RETAIN CONDUCTORS FOR RE-USE.
 - 19 DISCONNECT LOAD-SIDE CONDUCTORS TO AIR COMPRESSOR MOTOR FROM STARTERS IN POSITION 3C. REMOVE CONTACTOR, THERMAL OVERLOADS, HAND-OFF-AUTO SWITCH, AND INDICATOR LIGHT. PLUG BLANK HOLES IN DOOR.
 - 20 REMOVE CONDUCTORS AND RACEWAY BETWEEN MOTOR CONTROL CENTER AND AIR COMPRESSOR MOTOR.
 - 21 DISCONNECT LOAD-SIDE CONDUCTORS TO AIR COMPRESSOR MOTOR FROM STARTER IN POSITION 3D. REMOVE CONTACTOR, THERMAL OVERLOADS, HAND-OFF-AUTO-SWITCH, AND INDICATOR LIGHT. PLUG BLANK HOLES IN DOOR.
 - 22 REMOVE CONDUCTORS BETWEEN MOTOR CONTROL CENTER AND AIR COMPRESSOR MOTOR. RETAIN CONDUIT FOR RE-USE.



NO.	BY	REVISIONS	DATE

DEMOLITION PLANS
AND NOTES

DRAWN BY: STAFF
APPROVED BY S. HOVIS

PROJECT NO:	06070
DATE:	19 SEP 06

CITY OF LYNCHBURG
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Full Scale Verification




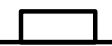

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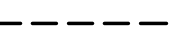
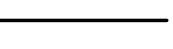



D1

LEGEND:

POWER

	EQUIPMENT CONNECTION
	NEMA 5-20R DUPLEX RECEPTACLE, WALL MOUNTED 18" AFF, UON. WP = WEATHERPROOF WITH GROUND FAULT CIRCUIT PROTECTION AC = MOUNT 3" ABOVE COUNTER BACKSPASH GFI = GROUND FAULT CIRCUIT INTERRUPTOR
	277/480 PANELBOARD
	120/208 PANELBOARD
	480V, 3P, 100A DISCONNECT 70A, NEMA 1
	VOLTAGE, POLES, AMP RATING FUSE SIZE, ENCLOSURE TYPE

CONDUCTORS AND RACEWAYS

	CONDUIT RUN CONCEALED UNDER FLOOR
	CONDUIT RUN EXPOSED OR ABOVE SUSPENDED CEILING
	JUNCTION BOX
	CONDUIT TURNING DOWN
	CONDUIT TURNING UP

ABBREVIATIONS:

A	AMPERES
C	CONDUIT
CA	COMPRESSED AIR
COP	COPPER
CR	CONDENSER WATER RETURN
CS	CONDENSER WATER SUPPLY
DR	DRAIN
DWG	DRAWING
(E)	EXISTING
EGC	EQUIPMENT GROUNDING CONDUCTOR
EMT	ELECTRICAL METALLIC TUBING
FD	FLOOR DRAIN
GFEP	GROUND FAULT EQUIPMENT PROTECTION
GFI	GROUND FAULT INTERRUPTING
GND	GROUND
HOA	HAND-OFF-AUTO
JB	JUNCTION BOX
LFMC	LIQUID-TIGHT FLEXIBLE METAL CONDUIT
MAX	MAXIMUM
MCA	MINIMUM CIRCUIT AMPACITY
MCC	MOTOR CONTROL CENTER
MUW	MAKE-UP WATER
NF	NON FUSED
NIC	NOT IN CONTRACT
OD	OUTSIDE DIAMETER
P	PHASES OR POLES
PB	PUSHBUTTON
RSC	RIGID STEEL CONDUIT
STL	STEEL
TYP	TYPICAL
UG	UNDERGROUND
UON	UNLESS OTHERWISE NOTED
UTP	UNSHIELDED TWISTED PAIR
V	VOLTS
W	WIRES
W/	WITH
W/O	WITHOUT
WP	WEATHERPOOF

GENERAL ELECTRICAL NOTES:

- THESE DRAWINGS ARE SCHEMATIC IN NATURE AND INDICATE THE GENERAL AND APPROXIMATE LOCATION OF EQUIPMENT AND EXISTING CONSTRUCTION. DO NOT SCALE DRAWINGS FOR FABRICATION. FIELD-VERIFY ALL DIMENSIONS AND LOCATIONS.
- APPLICABLE CODES
ALL ELECTRICAL WORK ON THIS PROJECT SHALL BE INSTALLED IN ACCORDANCE WITH THE 2003 VIRGINIA UNIFORM STATEWIDE BUILDING CODE AND NFPA 70-2002 (NATIONAL ELECTRICAL CODE).
- COORDINATION
COORDINATE ARRANGEMENT, MOUNTING, AND SUPPORT OF ELECTRICAL EQUIPMENT: TO PROVIDE FOR EASE OF DISCONNECTING EQUIPMENT; TO ALLOW RIGHT OF WAY FOR PIPING; AND SO RACEWAYS WILL BE CLEAR OF OBSTRUCTIONS AND OF THE WORKING AND ACCESS SPACE OF OTHER EQUIPMENT. COORDINATE INSTALLATION OF REQUIRED SUPPORTING DEVICES AND SET SLEEVES IN CAST-IN-PLACE CONCRETE, MASONRY WALLS, AND OTHER STRUCTURAL COMPONENTS AS THEY ARE CONSTRUCTED. COORDINATE LOCATION OF ACCESS PANELS AND DOORS FOR ELECTRICAL ITEMS THAT ARE BEHIND FINISHED SURFACES OR OTHERWISE CONCEALED.
- ELECTRICAL IDENTIFICATION
4.1 EQUIPMENT IDENTIFICATION: PROVIDE LABELS FOR PANELBOARDS, ELECTRICAL CABINETS, MODIFIED UNITS WITH MOTOR CONTROL CENTERS, DISCONNECT SWITCHES, AND AS ADDITIONALLY INDICATED. LABELS SHALL BE LAMINATED ACRYLIC, WITH 1/2-INCH ENGRAVED BLACK LETTERING ON 1-1/2" WHITE STOCK.
4.2 DEVICE CIRCUIT IDENTIFICATION: PROVIDE SELF-ADHESIVE 1/4" HEIGHT CLEAR LABELS WITH 1/8" BLACK PRINTED TEXT WITH EACH RECEPTACLE INDICATING PANELBOARD AND BRANCH CIRCUIT.
4.3 RACEWAY AND CABLE LABELS: PROVIDE PRE-TENSIONED, PRE-PRINTED, WRAPAROUND PLASTIC SLEEVES THAT ARE SIZE TO SUIT THE DIAMETER OF THE ITEM IDENTIFIED.
4.4 TAPE MARKERS FOR WIRE: VINYL OR VINYL-CLOTH, SELF-ADHESIVE, WRAPAROUND TYPE WITH PREPRINTED NUMBERS AND LETTERS.
- PENETRATIONS AND SLEEVES
5.1 FIRE-RATED ASSEMBLIES: APPLY FIRESTOPPING TO ELECTRICAL PENETRATIONS OF FIRE-RATED FLOOR AND WALL ASSEMBLIES TO RESTORE ORIGINAL FIRE-RESISTANCE RATING.
5.2 MASONRY WALLS: INSTALL SLEEVES FOR PENETRATIONS. SELECT SLEEVE SIZE TO ALLOW FOR 1/2 INCH (12.5 MM) ANNULAR CLEAR SPACE BETWEEN RACEWAY AND SLEEVE.
5.3 ABOVE-GRADE EXTERIOR WALL PENETRATIONS: SEAL PENETRATIONS USING SLEEVES AND CAULK, UNLESS OTHERWISE NOTED.
- RACEWAY AND BOX REQUIREMENTS
OUTDOOR BOXES AND ENCLOSURES: NEMA 250, TYPE 4X.
INDOOR BOXES AND ENCLOSURES: NEMA 250 TYPE 1 UNLESS OTHERWISE INDICATED.
OUTDOOR ABOVEGROUND RACEWAY: RIGID STEEL CONDUIT.
INDOOR EXPOSED RACEWAY FOR POWER CIRCUITS: RIGID STEEL CONDUIT
INDOOR EXPOSED AND CONCEALED RACEWAY FOR COMMUNICATIONS: ELECTRICAL METALLIC TUBING.
INDOOR AND OUTDOOR CONNECTION TO VIBRATING EQUIPMENT INCLUDING MOTOR-DRIVEN EQUIPMENT: LIQUID-TIGHT FLEXIBLE METAL CONDUIT WITH A MAXIMUM LENGTH OF 36".
MINIMUM RACEWAY SIZE: 3/4-INCH TRADE SIZE.
- ENCLOSED SWITCHES
NEMA KS 1, TYPE HD, WITH LOCKABLE HANDLE, INTERLOCKED WITH COVER. IF INDICATED, PROVIDE SPECIFIED FUSES AND APPROPRIATE CLIPS.
- CABLES AND CONDUCTORS
8.1 CONDUCTOR AND CABLE TYPES:
A. SINGLE CONDUCTORS: THHN-THWN COPPER, #12 MINIMUM CONDUCTOR SIZE, SOLID FOR #10 AWG AND SMALLER, STRANDED FOR #8 AWG AND LARGER.
B. ALL OTHER CONDUCTORS AND CABLING: AS INDICATED.
8.2 CONDUCTOR AND CABLE APPLICATIONS:
A. SERVICE, FEEDER, AND BRANCH CIRCUITS: SINGLE CONDUCTORS IN RACEWAY.
B. ALL OTHER APPLICATIONS: AS INDICATED.
- PANELBOARDS
MODIFIED PANELBOARDS: PROVIDE OR RELOCATE BREAKERS AS INDICATED. NEW BREAKERS SHALL BE FROM SAME MANUFACTURER AS PANELBOARD AND SHALL HAVE SUITABLE FAULT CURRENT RATINGS. PROVIDE TYPED PANELBOARD INDEXES FOR ALL NEW AND MODIFIED PANELBOARDS.
- DEVICES
GFCI RECEPTACLES: STRAIGHT BLADE, FEED-THROUGH TYPE. COMPLY WITH NEMA WD 1, NEMA WD 6, UL 498, AND UL 943, CLASS A, 125 V, 20 A, AND INCLUDE INDICATOR LIGHT THAT IS LIGHTED WHEN DEVICE IS TRIPPED. PROVIDE WITH NEMA 250/3R CAST ALUMINUM BOX AND COVER.

SPECIFICATIONS:

COOLING TOWER

BASIS OF DESIGN: MARLEY NC8302E-1

COOLING TOWER SHALL BE FACTORY ASSEMBLED, CTI CERTIFIED, FM APPROVED, SINGLE CELL, INDUCED DRAFT, CROSSFLOW TYPE WITH 15 MIL THERMOFORMED PVC FILM FILL WITH INTEGRAL LOUVERS AND TRIPLE PASS PVC DRIFT ELIMINATORS. CONSTRUCTION SHALL BE HEAVY GAUGE G-235 GALVANIZED STEEL WITH GALVANIZED STEEL COLD WATER BASIN.

ADDITIVE BID ITEM #3 CHANGE COOLING TOWER COLD WATER BASIN FROM GALVANIZED STEEL TO 403 STAINLESS STEEL.

TOWER SHALL BE NOMINAL 200 TONS, CAPABLE OF COOLING 600 GPM WATER FROM 95°F TO 85°F AT 78°F WB AMBIENT. DRIFT RATE SHALL BE WITHIN 0.005% OF DESIGN FLOW RATE.

TOWER SHALL WITHSTAND WIND LOAD OF 30 PSF; 0.3g SEISMIC LOAD; 2g HORIZONTAL AND 3g VERTICAL SHIPPING AND HOISTING LOAD. FAN DECK AND HOT WATER BASIN COVERS SHALL WITHSTAND 50 PSF LIVE LOAD OR 200 LB CONCENTRATED LOAD. HANDRAILS SHALL BE CAPABLE OF WITHSTANDING 200 LB CONCENTRATED LIVE LOAD IN ANY DIRECTION.

FAN SHALL BE PROPELLER TYPE INCORPORATING INDIVIDUALLY ADJUSTABLE HEAVY ALUMINUM ALLOY BLADES AND ELECTROGALVANIZED HUBS. FAN SHALL BE DRIVEN THRU A RIGHT ANGLE, INDUSTRIAL DUTY, OIL LUBRICATED, GEARED SPEED REDUCER REQUIRING NO OIL CHANGES FOR THE FIRST (5) YEARS OF OPERATION. EXTERNAL LUBE LINE WITH DIPSTICK AND GALVANIZED FAN GUARD SHALL BE PROVIDED.

MOTOR SHALL BE OUT-OF-AIRSTREAM, 460V/3PH/60HZ, 2-SPEED, SINGLE WINDING, 1800/900 RPM, 10 HP, TEFC, 1.15 SF, VARIABLE TORQUE, AND SPECIALLY INSULATED FOR COOLING TOWER DUTY. MOTOR SHALL BE CONNECTED TO GEAR REDUCER BY A DYNAMICALLY BALANCED STAINLESS STEEL TUBE AND FLANGE DRIVESHAFT. MOTOR SHALL BE FURNISHED LOOSE BY MANUFACTURER FOR FIELD INSTALLATION AND ALIGNMENT BY CONTRACTOR.

TOWER SHALL HAVE A FACTORY-INSTALLED UL LISTED NEMA 3R CONTROL PANEL FOR 2-SPEED MOTOR CONTROL WITH MAIN FUSED DISCONNECT WITH EXTERNAL LOCKABLE OPERATING HANDLE, ACROSS-THE-LINE MAGNETIC OR SOLID STATE SOFT-START MOTOR STARTER, SOLID STATE TEMPERATURE CONTROLLER, DOOR MOUNTED AUTO/MANUAL SELECTOR SWITCH, AND TERMINAL BLOCK FOR FIELD CONNECTION TO TEMPERATURE SENSOR AND REMOTE VIBRATION LIMIT SWITCH.

MANUFACTURER SHALL FURNISH LOOSE FOR CONTRACTOR INSTALLATION A TEMPERATURE SENSOR AND SPDT, ADJUSTABLE, MANUAL RESET VIBRATION LIMIT SWITCH IN NEMA 4 HOUSING.

TOWER SHALL HAVE 9 kW 480V/3PH/60HZ STAINLESS STEEL ELECTRIC IMMERSION HEATER WITH TEMPERATURE PROBE, DISCONNECT SWITCH, AND NEMA 4 ENCLOSURE HOUSING A MAGNETIC CONTACTOR, 24V CONTROL TRANSFORMER, AND SOLID STATE CIRCUIT BOARD FOR TEMPERATURE AND LOW-WATER CUT-OFF. HEATER PACKAGE SHALL BE FURNISHED LOOSE BY MANUFACTURER FOR CONTRACTOR INSTALLATION.

TOWER SHALL HAVE (2) 6" FLANGED CONDENSER WATER RETURN CONNECTIONS WITH HORIZONTAL CAST IRON CONTROL VALVES WITH STAINLESS STEEL LOCKING HANDLES AND FULL FLAT FACE FLANGE GASKETS.

TOWER SHALL HAVE (1) 6" SIDE SUCTION CONDENSER WATER SUPPLY CONNECTION WITH REMOVABLE TRASH SCREEN AND WELDING BEVEL AND MECHANICAL COUPLING GROOVE.

TOWER SHALL HAVE (1) 1" NPT MAKEUP WATER CONNECTION WITH FLOAT VALVE.

TOWER SHALL HAVE (1) 3" NPT OVERFLOW CONNECTION AND (1) 1-1/2" NPT DRAIN CONNECTION.

GENERAL MECHANICAL NOTES:

- ALL MATERIAL AND EQUIPMENT SHALL BE NEW UNLESS NOTED OTHERWISE.
- THESE DRAWINGS ARE SCHEMATIC IN NATURE AND ARE NOT INTENDED FOR USE AS FABRICATION DRAWINGS. DRAWINGS INDICATE THE GENERAL AND APPROXIMATE SIZE AND LOCATION OF EQUIPMENT AND PIPING. FIELD VERIFY ALL DIMENSIONS AND LOCATIONS PRIOR TO BEGINNING WORK.
- ALL WORK SHALL BE INSTALLED IN ACCORDANCE WITH APPLICABLE CODES AND REGULATIONS.
- THE CONTRACTOR SHALL COORDINATE THE WORK WITH EXISTING CONDITIONS, INCLUDING BEAMS, COLUMNS, AND OTHER OBSTRUCTIONS, WHETHER OR NOT SUCH IS SHOWN ON DRAWINGS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGE THAT OCCURS TO EXISTING MATERIAL AND EQUIPMENT TO REMAIN OR TO BE RELOCATED DURING DEMOLITION AND CONSTRUCTION.
- MINOR DEVIATIONS FROM THE PLANS MAY BE MADE TO AVOID MINOR CONFLICTS. WHEN MAJOR CONFLICTS ARE APPARENT, THE ENGINEER SHALL BE ADVISED IMMEDIATELY, AND AFFECTED WORK SHALL NOT BE INSTALLED UNTIL THE CONFLICT HAS BEEN RESOLVED.
- ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS AND SUCH THAT FILTERS, VALVES, MOTORS, AND OTHER COMPONENTS ARE ACCESSIBLE AND SERVICEABLE. PROVIDE ACCESS DOORS WHERE REQUIRED. MAINTAIN ALL REQUIRED CLEARANCES.
- INSTALLATION OF FIELD MOUNTED CONTROL COMPONENTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ALL CONTROL WIRING SHALL BE IN CONDUIT AND INSTALLED PER NEC.
- ALL PIPING SHALL BE CLEAN AND FREE OF DIRT AND SCALE AT TIME OF INSTALLATION.
- PROVIDE MANUAL AIR VENTS AT ALL HIGH POINTS AND DRAINS AT LOW POINTS IN PIPING SYSTEMS.
- EQUIPMENT SHOWN IS BASED ON THE INDICATED MANUFACTURER AND MODEL. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ACTUAL INSTALLED EQUIPMENT AND ANY REQUIRED CHANGES.

COOLING TOWER (CONTINUED)

TOWER SHALL HAVE GALVANIZED STEEL 30"W x 33"H ACCESS DOOR ON EACH ENDWALL AND FACTORY-INSTALLED INTERIOR PLENUM WALKWAY WITH GALVANIZED STEEL GRATING.

MANUFACTURER SHALL FURNISH OSHA-COMPLIANT PERIMATER HANDRAIL, KNEERAIL, TOEBOARD, LADDER, AND LADDER EXTENSION, SHIPPED LOOSE FOR CONTRACTOR INSTALLATION.

TOWER SHALL BE FACTORY-EQUIPPED WITH A SPRING VIBRATION ISOLATOR AT EACH CORNER.

AIR COMPRESSOR

BASIS OF DESIGN: QUINCY QR07520D

COMPRESSOR SHALL BE DUPLEX, TANK-MOUNTED, PRESSURE LUBRICATED TYPE WITH CAST-IRON CYLINDERS, CRANKCASE, AND FLYWHEEL; HEAVY-DUTY DISC-TYPE VALVES; SPIN-ON OIL FILTER; 200-GAL ASME CODED AND NATIONAL BOARD-APPROVED RECEIVER WITH ASME SAFETY VALVE, PRESSURE GAUGE, MANUAL SHUT-OFF AT TANK DISCHARGE, AND MANUAL TANK DRAIN.

COMPRESSOR SHALL BE 460V/3PH/60HZ WITH (2) 7.5 HP MOTORS, CAPABLE OF SUPPLYING 34 CFM @ 80 PSIG WITH A FACTORY-CERTIFIED MAXIMUM OIL CARRYOVER OF 2 PPM.

COMPRESSOR SHALL HAVE A HIGH EFFICIENCY INTERCOOLER; INTAKE FILTER/SILENCER; ISOLATION PADS; BEDPLATES FOR MOTOR AND COMPRESSOR MOUNTING; METAL OSHA-COMPLIANT BELTGUARDS, AND AUTOMATIC TANK DRAIN VALVE.

COMPRESSOR SHALL HAVE AN ELECTRONIC DUPLEX CONTROL PANEL WITH MAGNETIC STARTERS, AUTO-ALTERNATION WITH LEAD/LAG, AND CONTROL TRANSFORMER IN NEMA 1 SINGLE POWER SOURCE ENCLOSURE AND UNIT-MOUNTED DISCONNECT.

COMPRESSOR SHALL HAVE DISCHARGE CONNECTION AND CONTROL PANEL LOCATIONS ORIENTED AS SHOWN ON PLAN VIEW.

COMPRESSED AIR DRYER

COMPRESSED AIR DRYER SHALL BE EQUAL TO HANKISON HPR 5-10, 10 SCFM RATED CAPACITY, R-134a REFRIGERANT, 115V/1PH/60HZ, 0.21kW POWER, 3/8" CONNECTIONS, 30-250 PSIG & 40-122°F INLET AIR, 40-113°F AMBIENT. PROVIDE WALL-MOUNT BRACKET AND POWER CORD FOR 115V RECEPTACLE.

ADDITIVE BID ITEM #2

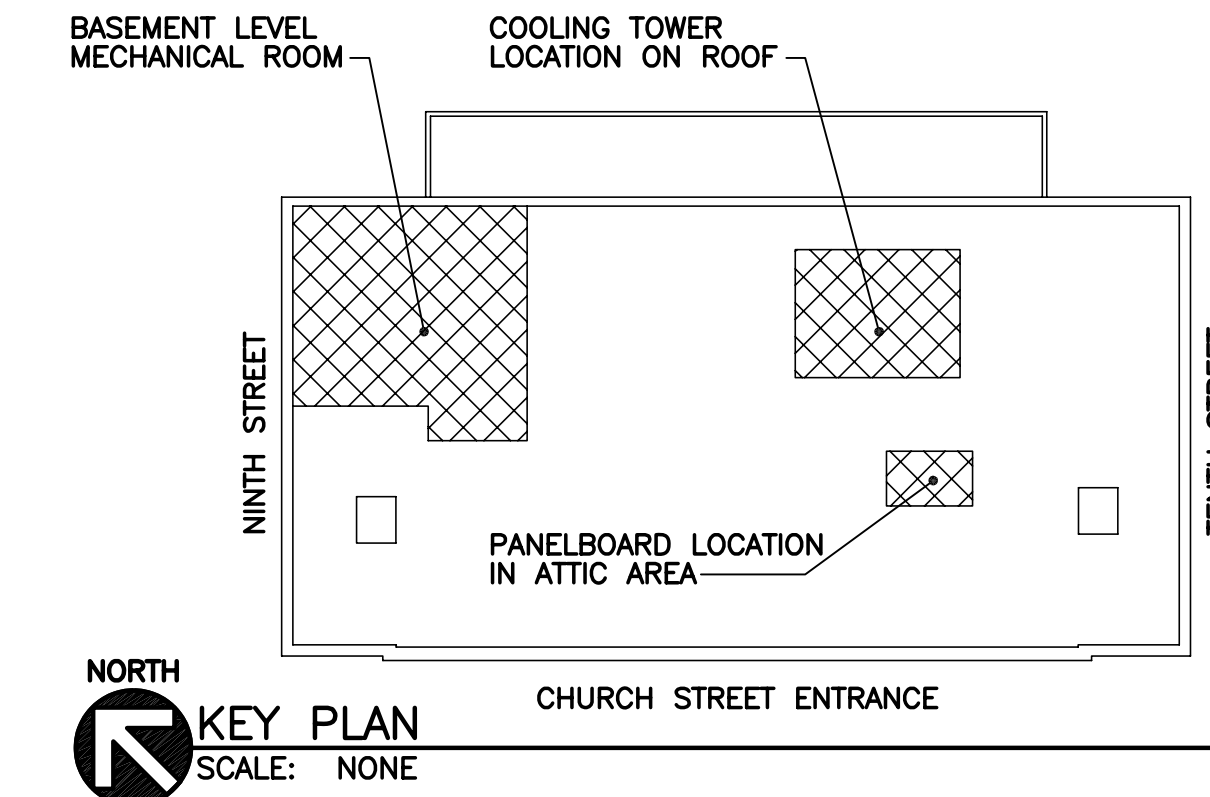
PIPING AND INSULATION

CONDENSER WATER PIPING SHALL BE 6" SCH 40 WELDED AND FLANGED CARBON STEEL PIPING. INSULATE WITH 1-1/2-INCH-THICK MINERAL FIBER WITH VAPOR BARRIER ALUMINUM JACKET. INSULATE FITTINGS WITH PRE-MOLDED INSULATION SECTIONS WITH PVC COVERS.

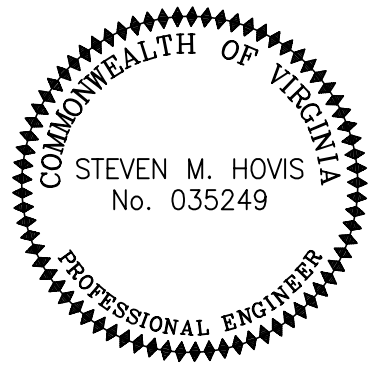
MAKEUP WATER PIPING SHALL BE 1-1/4" SCH 40 THREADED CARBON STEEL PIPING. INSULATE WITH 1-INCH-THICK MINERAL FIBER WITH VAPOR BARRIER ALUMINUM JACKET. INSULATE FITTINGS WITH PRE-MOLDED INSULATION SECTIONS WITH PVC COVERS.

COOLING TOWER DRAIN AND OVERFLOW PIPING SHALL BE SCH 40 THREADED CARBON STEEL PIPING, SIZE AS INDICATED ON PLANS.

COMPRESSED AIR PIPING AND COMPRESSOR DRAIN PIPING SHALL BE COPPER TUBING.



NO.	BY	REVISIONS	DATE



LEGEND, NOTES
AND SPECIFICATIONS

DRAWN BY: STAFF	PROJECT NO: 06070
APPROVED BY: S. HOVIS	DATE: 19 SEP 06

CITY OF LYNCHBURG
REPLACEMENT OF CITY HALL
AIR COMPRESSOR AND COOLING TOWER

LYNCHBURG, VIRGINIA

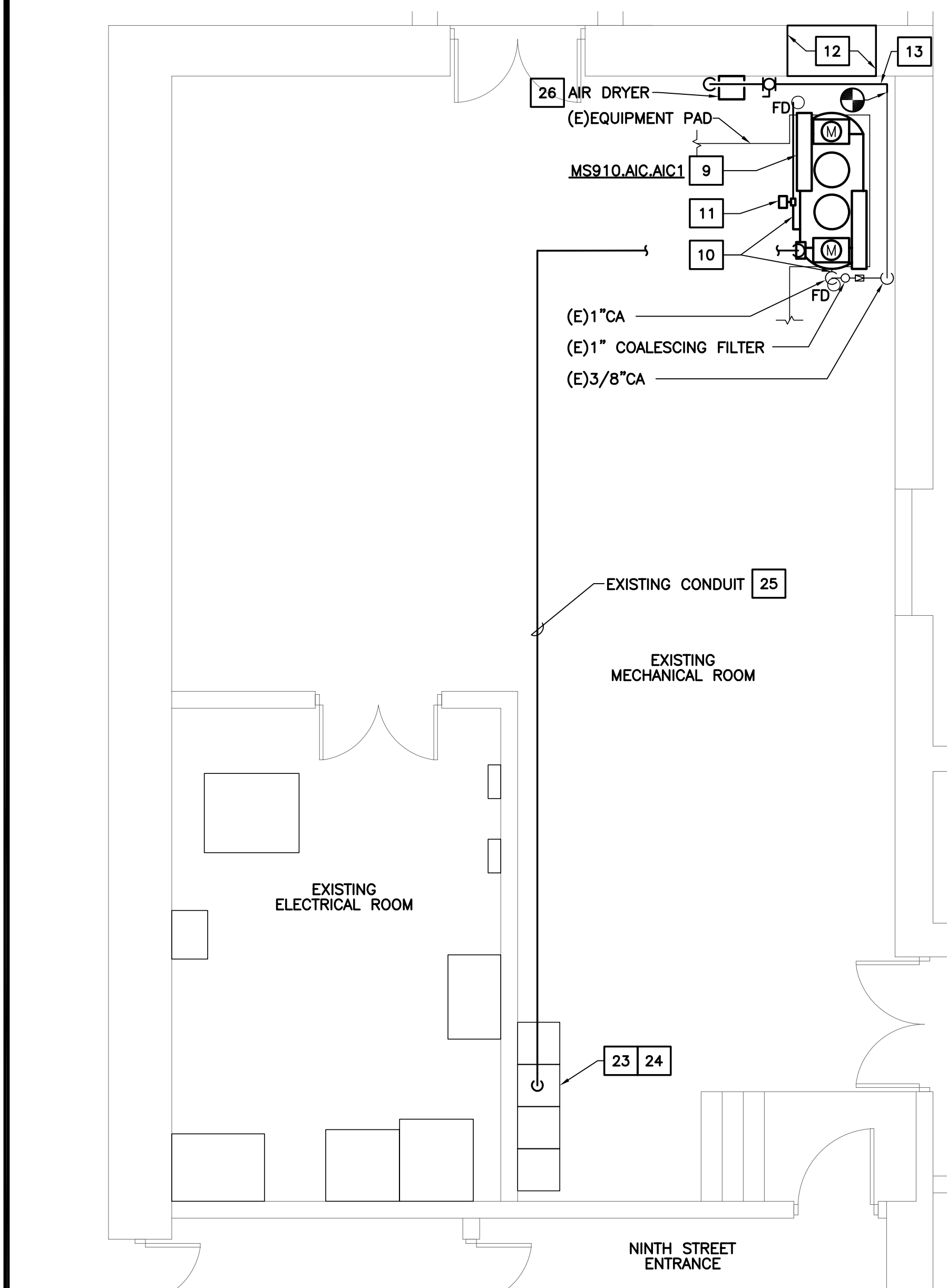
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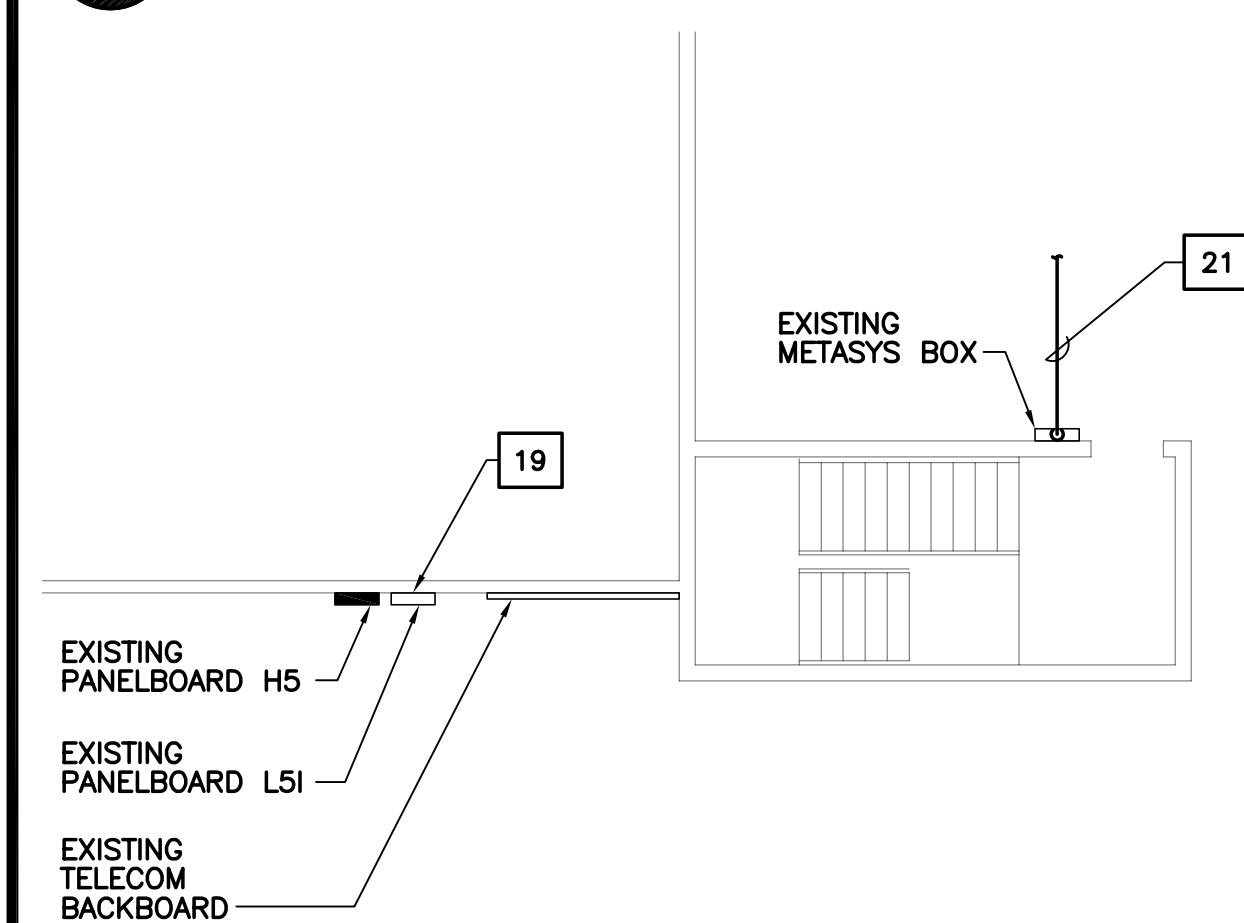
WWW.VIRGINIA-AE.COM
CONTACT@VIRGINIA-AE.COM



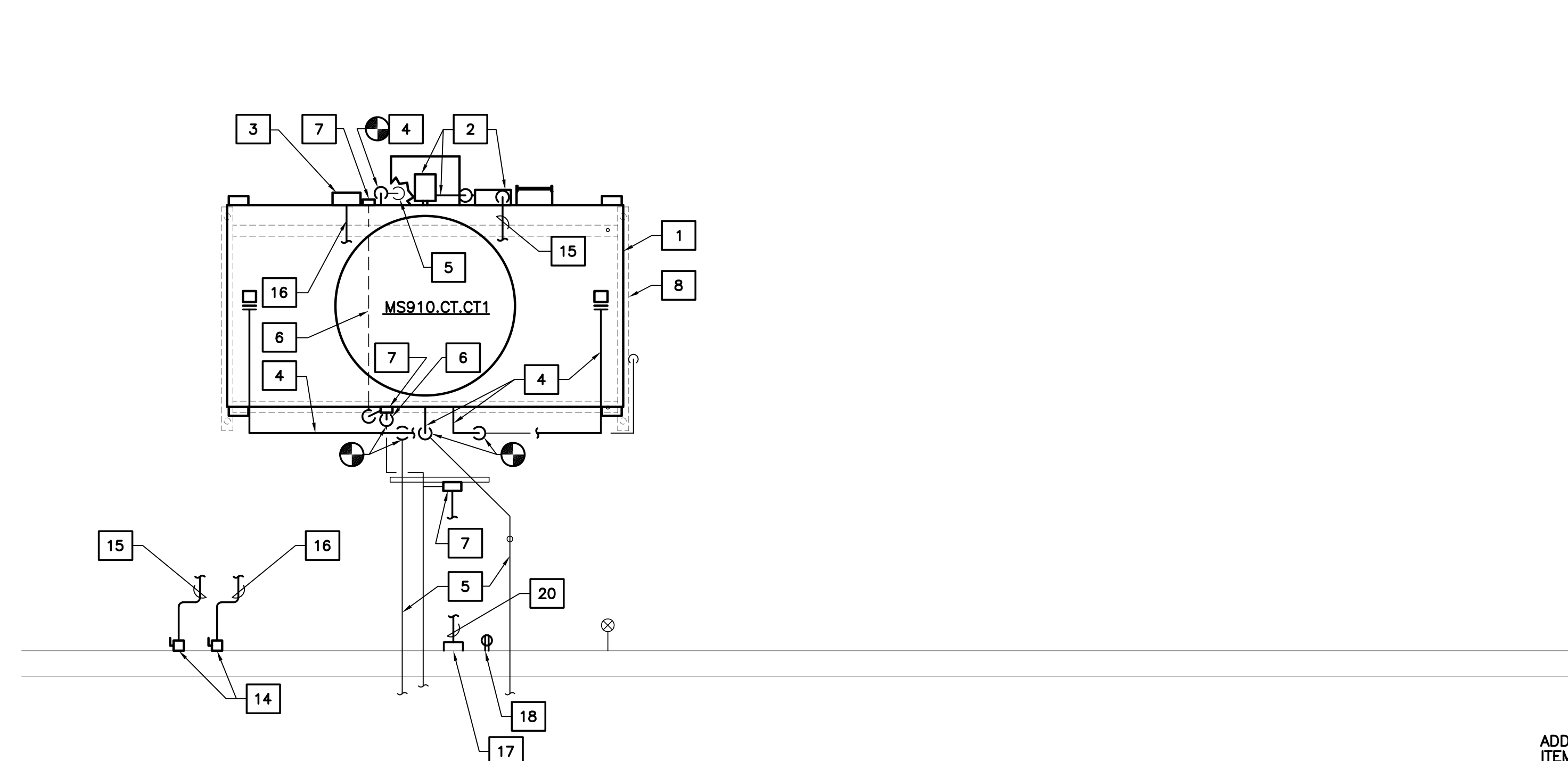
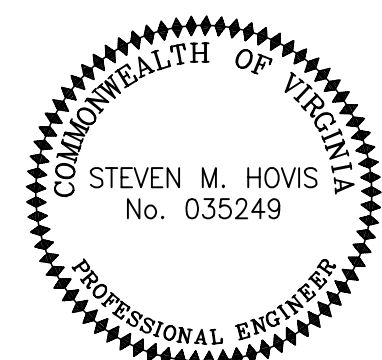
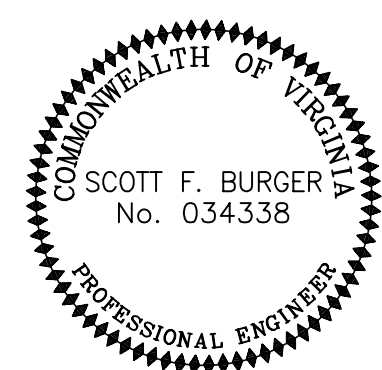
Full Scale Verification
0" 1"
Drawing No.:
ME1



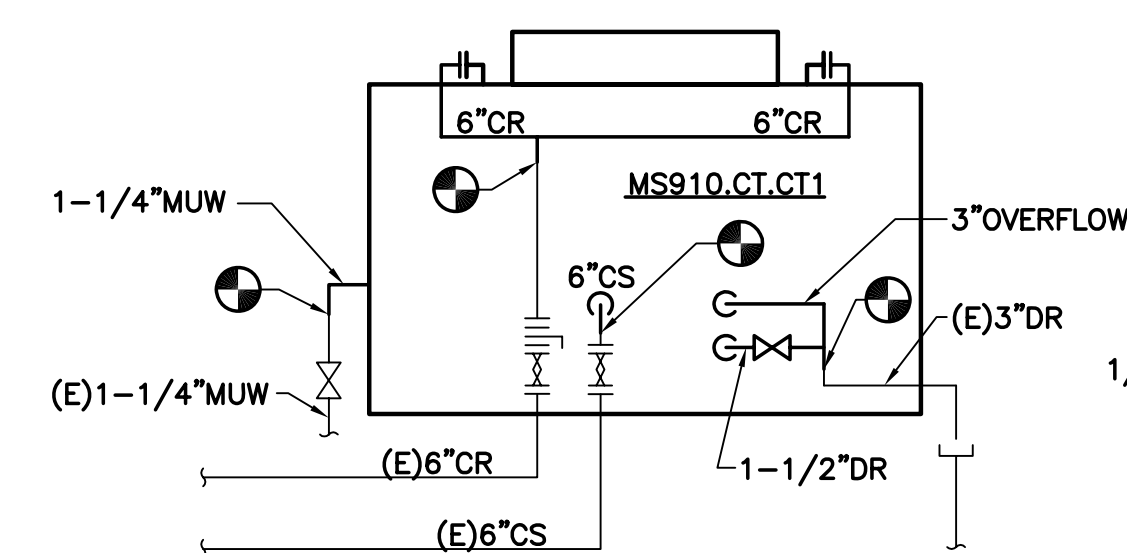
MECHANICAL ROOM FLOOR PLAN
SCALE: 1/4"=1'-0"



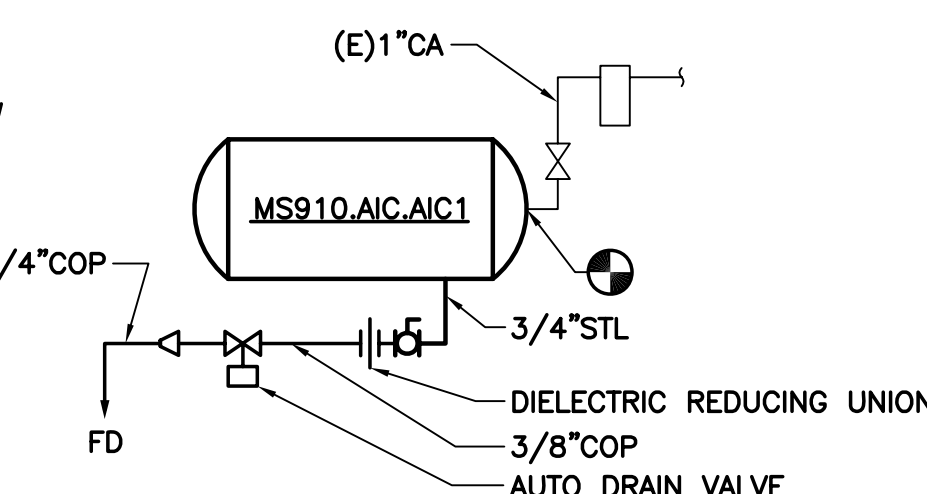
ATTIC FLOOR PLAN
SCALE: 1/8"=1'-0"



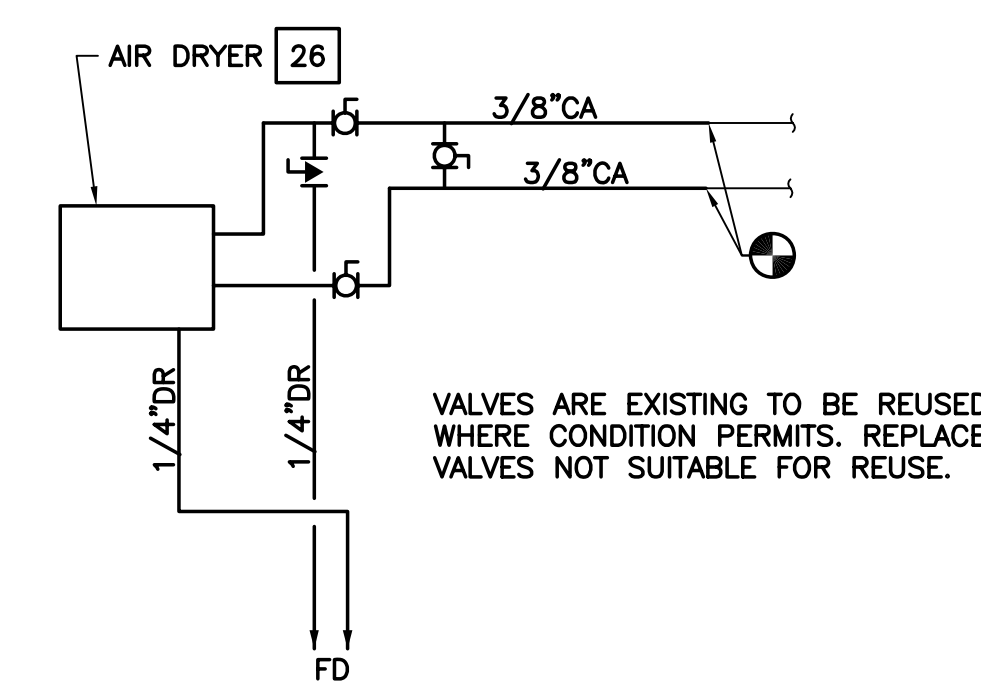
PARTIAL ROOF PLAN
SCALE: 1/4"=1'-0"



COOLING TOWER SCHEMATIC
SCALE: NONE



AIR COMPRESSOR SCHEMATIC
SCALE: NONE



AIR DRYER SCHEMATIC
SCALE: NONE

SEQUENCE OF OPERATIONS:

GENERAL

CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL DEVICES, HARDWARE, CONDUIT, WIRING, SOFTWARE, AND PROGRAMMING REQUIRED TO ACHIEVE THE SEQUENCE OF OPERATIONS.

REFER TO OWNER'S AS-BUILT CONTROLS DOCUMENTS DATED 1981 FOR EXISTING CONDITIONS.

COOLING TOWER

EXISTING TOWER HAS SINGLE SPEED FAN WITH STARTER IN MCC. NEW TOWER HAS TWO-SPEED FAN WITH STARTER IN CONTROL PANEL.

EXISTING SEQUENCE OF OPERATIONS SHALL BE MAINTAINED, EXCEPT THAT A CALL FOR COOLING TOWER FAN OPERATION SHALL TURN CONTROL OF THE FAN OVER TO THE COOLING TOWER CONTROL PANEL WHICH SHALL DETERMINE THE FAN SPEED.

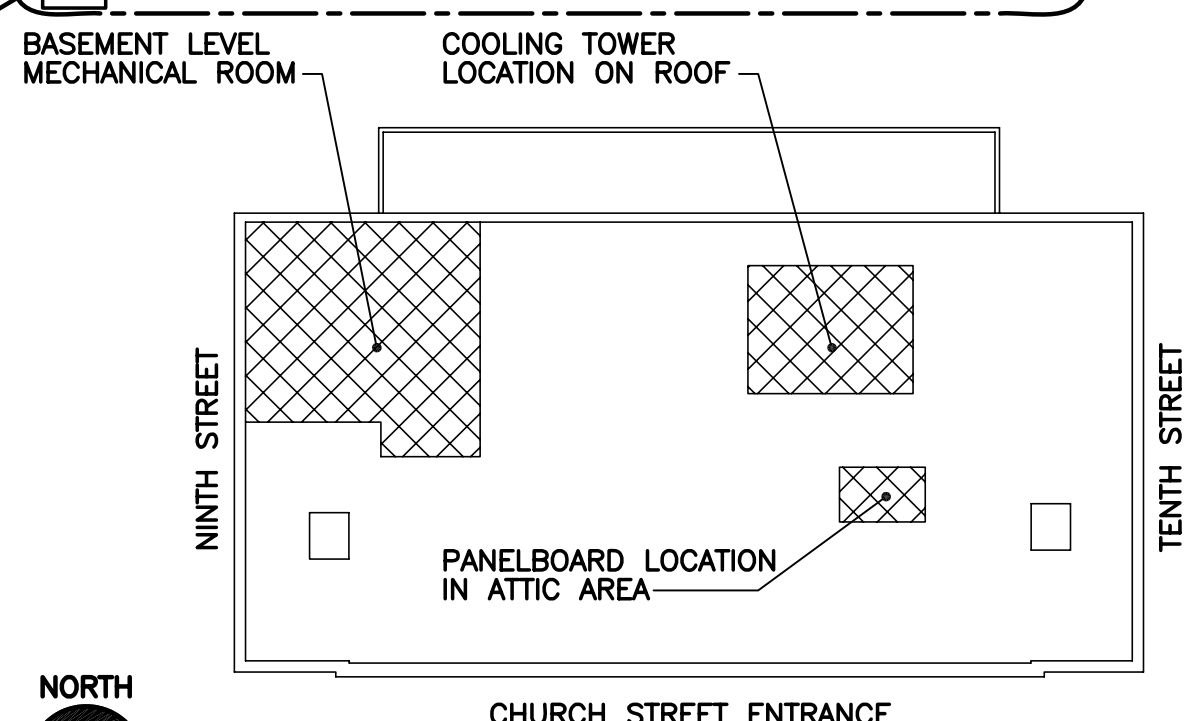
DRAWING NOTES:

- STRUCTURAL STEEL MODIFICATIONS SHOWN ARE BASED ON SCHEDULED COOLING TOWER. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING STEEL MODIFICATIONS WITH ACTUAL INSTALLED EQUIPMENT.
- POINTS OF DEMOLITION AND NEW-TO-EXISTING TIE-IN POINTS FOR PIPING AND CONDUIT AT COOLING TOWER ARE BASED ON SCHEDULED COOLING TOWER. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING PIPING AND CONDUIT DEMO / TIE-IN POINTS WITH ACTUAL INSTALLED EQUIPMENT.

CONSTRUCTION NOTES:

- PROVIDE COOLING TOWER. INSTALL ALL ACCESSORIES SHIPPED LOOSE BY MANUFACTURER. REFER TO SPECIFICATIONS DRAWING ME1.
- INSTALL FAN MOTOR FURNISHED LOOSE BY COOLING TOWER MANUFACTURER OUTSIDE OF AIRSTREAM. PROVIDE CONDUIT AND POWER WIRING FROM CONTROL PANEL TO MOTOR.
- INSTALL BASIN HEATER PACKAGE FURNISHED BY COOLING TOWER MANUFACTURER.
- PROVIDE 6" CONDENSER WATER SUPPLY AND RETURN PIPING, 1-1/2" DRAIN PIPING, 3" OVERFLOW PIPING, AND 1-1/4" MAKEUP WATER PIPING FROM POINT OF DEMOLITION TO TOWER CONNECTION LOCATION. PROVIDE 1-1/4"x1" REDUCER AT MAKEUP WATER CONNECTION. PROVIDE 1-1/2" THREADED GATE VALVE AND 3"x1-1/2" REDUCING TEE IN DRAIN PIPING. INSULATE AND HEAT TRACE CONDENSER WATER AND MAKEUP WATER PIPING. REFER TO SPECIFICATIONS DRAWING ME1.
- INSULATE AND HEAT TRACE EXISTING CONDENSER WATER AND MAKEUP WATER PIPING. REFER TO SPECIFICATIONS DRAWING ME1.
- PROVIDE CONDUIT AND POWER WIRING FROM INDICATED POINT OF DEMOLITION TO HEAT TRACE THERMOSTATS.
- PROVIDE HEAT TRACE THERMOSTAT.
- SEE DRAWING S1 FOR MODIFICATIONS TO EXISTING STEEL SUPPORT STRUCTURE.
- PROVIDE AIR COMPRESSOR. REFER TO SPECIFICATIONS DRAWING ME1 AND GENERAL NOTE 8 ON TITLE SHEET.
- RECONNECT 1" COMPRESSED AIR PIPING TO COMPRESSOR AND PROVIDE 3/8" DRAIN PIPING TO FLOOR DRAIN.
- INSTALL AUTO DRAIN VALVE FURNISHED LOOSE BY COMPRESSOR MANUFACTURER.
- PROVIDE LINTEL FOR WALL OPENING PER DRAWING S1.
- REINSTALL SALVAGED 3/8" COMPRESSED AIR INLET AND OUTLET PIPING FROM EXISTING AIR DRYER TO POINTS INDICATED. REINSTALL SALVAGED 1/4" DRYER DRAIN PIPING TO FLOOR DRAIN. REINSTALL SALVAGED CONDUIT AND WIRING TO EXISTING RECEPTACLE. REINSTALL CONTROL DEVICES AND ASSOCIATED CONDUIT AND WIRING ON WALL.
- PROVIDE 30A/3P/600V NEMA 4X UNFUSED DISCONNECT. CONNECT TO EXISTING LINE-SIDE RACEWAY AND CONDUCTORS.
- PROVIDE (4) #10 IN 3/4" CONDUIT BETWEEN DISCONNECT AND COOLING TOWER CONTROL PANEL.
- PROVIDE (4) #10 IN 3/4" CONDUIT BETWEEN DISCONNECT AND BASIN HEATER CONTROL PANEL.
- PROVIDE 8"x8"x6" NEMA 4X JUNCTION BOX AND ATTACH TO PARAPET WALL AND EXISTING CONDUIT.
- PROVIDE 20A/1P/120V GFCI RECEPTACLE IN WEATHERPROOF ENCLOSURE. ATTACH RECEPTACLE TO EXISTING CIRCUIT IN JUNCTION BOX USING (3) #12 IN 3/4" CONDUIT.
- REPLACE BREAKER IN POSITION 7 WITH 20A/1P BREAKER RATED TO PROVIDE GROUND FAULT EQUIPMENT PROTECTION (GFE). RE-USE EXISTING RACEWAY AND CONDUCTORS. EXISTING PANELBOARD IS GE TYPE NLAB TAKING TYPE THQB BREAKERS.
- CONNECT PIPING HEAT TRACE TO EXISTING CIRCUIT WITHIN JUNCTION BOX USING (3) #12 IN 3/4" CONDUIT.
- PROVIDE 3/4" CONDUIT BETWEEN BUILDING MANAGEMENT SYSTEM BOX AND COOLING TOWER CONTROL PANEL. PROVIDE CONDUCTORS AND PROGRAMMING AS REQUIRED TO ACHIEVE INDICATED SEQUENCE OF OPERATIONS.
- NOT USED.
- CONNECT LOAD-SIDE OF DISCONNECT IN POSITION 3C TO EXISTING CONDUCTORS TO COOLING TOWER FAN. RE-LABEL AS "COOLING TOWER PANEL".
- RELABEL MCC UNIT 3D AS "AIR COMPRESSOR PANEL".
- PROVIDE (4) #10 IN EXISTING CONDUIT BETWEEN MCC UNIT 3D AND AIR COMPRESSOR CONTROL PANEL.
- PROVIDE AIR DRYER. REFER TO SPECIFICATIONS DRAWING ME1.

ADDITIVE BID ITEM #2



KEY PLAN
SCALE: NONE

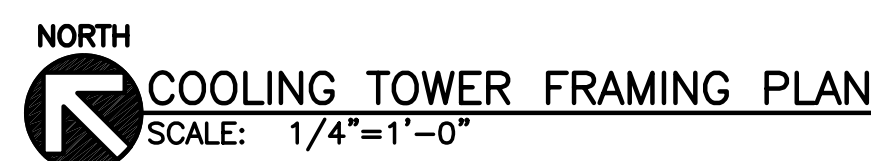
NO.	BY	REVISIONS	DATE

MECHANICAL / ELECTRICAL PLANS AND SCHEMATICS	
DRAWN BY: STAFF	PROJECT NO: 06070
APPROVED BY: S. HOVIS	DATE: 19 SEP 06

CITY OF LYNCHBURG REPLACEMENT OF CITY HALL AIR COMPRESSOR AND COOLING TOWER	
LYNCHBURG, VIRGINIA	

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Full Scale Verification 0" 1" Drawing No.: ME2
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S.